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SECTION 1: Identification of the substance/mixture and of the company/undertaking
1.1 Product identifiers

Product name : 18:2 Cardiolipin-d5

Product Number : 791108C
 Brand : Avanti

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Avanti Polar Lipids, INC
 700 Industrial Park
 Drive Alabaster, AL
 35007 United States

Telephone : of America
 Fax : (205) 663-2494
 (205) 663-0756

1.4 Emergency telephone number

Emergency Phone # : +1 703-741-5970 / 1800-424-9300(CHEMTREC)

SECTION 2: Hazards identification
2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302
 Acute toxicity, Inhalation (Category 3), H331
 Skin irritation (Category 2), H315
 Eye irritation (Category 2A), H319
 Carcinogenicity (Category 2), H351
 Reproductive toxicity (Category 2), H361
 Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
 Specific target organ toxicity - repeated exposure (Category 1), Liver, Kidney, H372
 Short-term (acute) aquatic hazard (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

| | |
|----------------------------|--|
| Hazard statement(s) | |
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |
| H336 | May cause drowsiness or dizziness. |
| H351 | Suspected of causing cancer. |
| H361 | Suspected of damaging fertility or the unborn child. |
| H372 | Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure. |
| H402 | Harmful to aquatic life. |
| Precautionary statement(s) | |
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P260 | Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. |
| P264 | Wash skin thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. |
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P304 + P340 + P311 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308 + P313 | IF exposed or concerned: Get medical advice/ attention. |
| P332 + P313 | If skin irritation occurs: Get medical advice/ attention. |
| P337 + P313 | If eye irritation persists: Get medical advice/ attention. |
| P362 | Take off contaminated clothing and wash before reuse. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Synonyms : 1',3'-BIS[1,2-DILINOLEOYL-SN-GLYCERO-3-PHOSPHO]-GLYCEROL-D5 (AMMONIUM SALT)

| Component | | Classification | Concentration |
|---------------------|-----------------------|--|---------------|
| Chloroform | | | |
| CAS-No. | 67-66-3 | Acute Tox. 4; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; Repr. 2; STOT SE 3; STOT RE 1; Aquatic Acute 3; H302, H331, H315, H319, H351, H361d, H336, H372, H402 | <= 100 % |
| EC-No. | 200-663-8 | | |
| Index-No. | 602-006-00-4 | | |
| Registration number | 01-2119486657-20-XXXX | | |

| | | |
|--|---|--|
| | Concentration limits: 20 %: STOT SE 3, H336; | |
|--|---|--|

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature -20 °C

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

| Component | CAS-No. | Value | Control parameters | Basis |
|------------|---------|--|---------------------|---|
| Chloroform | 67-66-3 | TWA | 10 ppm | USA. ACGIH Threshold Limit Values (TLV) |
| | Remarks | Central Nervous System impairment Liver damage Embryo/fetal damage Confirmed animal carcinogen with unknown relevance to humans | | |
| | | ST | 2 ppm 9.78 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | Potential Occupational Carcinogen See Appendix A | | |
| | | C | 50 ppm 240 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | | The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing-zone air samples. | | |
| | | PEL | 2 ppm 9.78 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|----------------------|
| a) Appearance | Form: liquid |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | No data available |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | ()No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | No data available |
| l) Vapour density | No data available |
| m) Relative density | No data available |
| n) Water solubility | No data available |
| o) Partition coefficient: n-octanol/water | No data available |

- | | | |
|----|---------------------------|-------------------|
| p) | Auto-ignition temperature | No data available |
| q) | Decomposition temperature | No data available |
| r) | Viscosity | No data available |
| s) | Explosive properties | No data available |
| t) | Oxidizing properties | No data available |

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male - 908 mg/kg

(OECD Test Guideline 401)

Remarks: Behavioral:Change in motor activity (specific assay). Behavioral:Ataxia. Lungs, Thorax, or Respiration:Respiratory stimulation.

LD50 Oral - Rat - male and female - 10,470 mg/kg (Ethanol)

(OECD Test Guideline 401)

LOEC Inhalation - Rat - male - 6 h - 500 ppm

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

LC50 Inhalation - Rat - male and female - 4 h - 124.7 mg/l (Ethanol)

(OECD Test Guideline 403)

Dermal: No data available

LD50 Dermal - Rabbit - > 20,000 mg/kg

Remarks: (RTECS)

No data available

No data available

Skin corrosion/irritation

No data available

Skin - Rabbit
Result: Irritating to skin. - 24 h
Remarks: (ECHA)
Skin - Rabbit (Ethanol)
Result: No skin irritation - 24 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation

No data available
Eyes - Rabbit
Result: Irritating to eyes.
Remarks: (ECHA)
Eyes - Rabbit (Ethanol)
Result: Eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation

No data available
Sensitisation test: - Guinea pig
Result: negative
(Maximisation Test)
Remarks: (ECHA)
Local lymph node assay (LLNA) - Mouse (Ethanol)
Result: negative
(OECD Test Guideline 429)

Germ cell mutagenicity

No data available
No data available
Ames test
Salmonella typhimurium
Result: negative
reverse mutation assay
Escherichia coli
Result: negative
(ECHA)
Ames test (Ethanol)
Salmonella typhimurium
Result: negative
In vitro mammalian cell gene mutation test (Ethanol)
Mouse lymphoma test
Result: negative
OECD Test Guideline 474
Rat - male and female - Bone marrow
Result: negative
OECD Test Guideline 486
Rat - male - Other cell types
Result: negative

Carcinogenicity

Suspected of causing cancer.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

Suspected of damaging the unborn child.
No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Vomiting, Cough, irritant effects, Shortness of breath, respiratory arrest, narcosis, Dizziness, Nausea, agitation, spasms, inebriation, Headache, Stomach/intestinal disorders, ataxia (impaired locomotor coordination), cardiovascular disorders
Drying-out effect resulting in rough and chapped skin.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

irritant effects, respiratory paralysis, Dizziness, narcosis, inebriation, euphoria, Nausea, Vomiting (Ethanol)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (Ethanol)

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence (Ethanol)

SECTION 12: Ecological information

12.1 Toxicity

No data available

| | |
|---|--|
| Toxicity to fish | flow-through test LC50 - Danio rerio (zebra fish) - 121 mg/l - 48 h (OECD Test Guideline 203) |
| | static test LC50 - Pimephales promelas (fathead minnow) - 103 - 171 mg/l - 96 h Remarks: (ECHA) |
| | flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 18.2 mg/l - 96 h Remarks: (ECHA) |
| | flow-through test LC50 - Micropterus dolomieu - 51 mg/l - 96 h Remarks: (ECHA) |
| | flow-through test EC50 - Pimephales promelas (fathead minnow) - 15,300 mg/l - 96 h (Ethanol) (US-EPA) |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - 79 mg/l - 48 h Remarks: (ECHA) |
| | EC50 - Daphnia magna (Water flea) - 9,268 - 14,221 mg/l - 48 h (Ethanol) Remarks: (IUCLID) |

| | |
|----------------------|---|
| Toxicity to algae | static test ErC50 - Chlamydomonas reinhardtii (green algae) - 13.3 mg/l - 72 h Remarks: (ECHA) |
| | IC5 - Scenedesmus quadricauda (Green algae) - 5,000 mg/l - 7 d (Ethanol) Remarks: (Lit.) |
| Toxicity to bacteria | EC5 - Pseudomonas putida - 6,500 mg/l - 16 h (Ethanol) Remarks: (IUCLID) |

12.2 Persistence and degradability

No data available

Biochemical Oxygen Demand (BOD) 930 - 1,670 mg/g (Ethanol)
Remarks: (Lit.)

Theoretical oxygen demand 2,100 mg/g (Ethanol)
Remarks: (Lit.)

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

No data available

Additional ecological information No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

UN number: 1888 Class: 6.1 Packing group: III
Proper shipping name: ChloroformSOLUTION

Reportable Quantity (RQ): 10 lbs

Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1888 Class: 6.1 Packing group: III
Proper shipping name: CHLOROFORMSOLUTION

EMS-No: F-A, S-A

IATA

UN number: 1888 Class: 6.1 Packing group: III
Proper shipping name: ChloroformSOLUTION

SECTION 15: Regulatory information

Reportable Quantity : D022 lbs

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

| | | |
|------------|--------------------|-----------------------------|
| Chloroform | CAS-No. 67-66-3 | Revision Date 2008-11-03 |
|------------|--------------------|-----------------------------|

| | | |
|------------|--------------------|-----------------------------|
| Chloroform | CAS-No. 67-66-3 | Revision Date 2008-11-03 |
|------------|--------------------|-----------------------------|

New Jersey Right To Know Components

| | | |
|------------|--------------------|-----------------------------|
| Chloroform | CAS-No. 67-66-3 | Revision Date 2008-11-03 |
|------------|--------------------|-----------------------------|

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information**Further information**

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